

New Peruvian Parasites from *Hemichionaspis minor* (Hym.).

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For the past year the writer has been engaged in work directed against pests of the native or tree-cotton (*Gossypium peruvianum*) in the Department of Piura, northwestern Peru. During that time many enemies of the greatly feared plague known as "piojo blanco" (*Hemichionaspis minor* Mask.) both parasitic and predaceous, have been studied and of the former group by far the majority belong to Aphelininae and Signiphorinae. Several of these forms appear to be new to science and it is for the purpose of giving for them a definite name and place in entomological literature that this short paper is written.

Some of the descriptions are from material reared by Prof. C. H. T. Townsend, Entomologist to the Peruvian Government, to whom the writer is deeply indebted, not only for the above-mentioned specimens, but equally so for his many helpful suggestions during the prosecution of this work. The remaining descriptions are from parasites reared by the writer, the type specimens of which are to be deposited in the U. S. National Museum.

Genus **PROSPALTELLA** Ashmead, 1904.

Prospalta (= *Prospaltella*), Howard; described in "Insect Life," 1894—2 species—no type designated.

Prospalta (= *Prospaltella*), Howard; mentioned in "U. S. Tech. Ser. No. 1," 1895—2 species—no type designated.

Prospalta (= *Prospaltella*), Ashmead; mentioned in "Chalcidoidea," Jan., 1904—type designated as *murtfeldtii*.

Prospaltella, Ashmead; proposed in "Proc. Ent. Soc. Wash." 1904.

Prospaltella, Howard; mentioned in "U. S. Tech. Ser. No. 12, part 4," 1907—type designated as *aurantii*.

On studying this genus it becomes evident that the generic description was drawn up from the species *murtfeldtii*, but Dr. L. O. Howard, in his "Revision of the Aphelininae of North America" (Technical Series No. 12, Part IV, U. S. Bureau of

Entomology, pg. 79, 1907) cites *P. aurantii* as the type. However, this cannot be accepted, for W. H. Ashmead in the "Classification of the Chalcid Flies" (Memoirs of the Carnegie Museum, Vol. I, No. 4, p. 345, 1904, designated *P. murtfeldtii* as the type of the genus. Previous to this, the writer finds no mention of a type species, as the original description of the genus by Dr. Howard (Insect Life, Vol. VII, p. 6, 1894) is silent on the subject, as is also a subsequent paper (Technical Series No. 1, U. S. Bureau of Entomology, p. 39, 1895). Therefore Ashmead's designation of *murtfeldtii* as the type must hold. That such is the case is rather unfortunate, as this species is rather less typical of the genus, as now known, than is *P. aurantii*. Moreover, with the addition of the species herein proposed, a few long-needed changes in the generic description become more apparent than ever.

1. First joint of the club is *not* always the widest. In *P. peruviana* sp. nov. the second joint equals, or is greater than, the first in width.

2. In some species the body does *not* taper "gradually from tegulae to tip of abdomen." This gradual tapering may be true of the type species, *P. murtfeldtii*, but it is not the case with *P. peruviana* or specimens of *P. aurantii* collected in Peru, in which the sides of the first, or longest, segment are nearly parallel, and in *P. berlesci* How. the abdomen is actually wider in the center than at either extremity.

3. Eyes *not* always naked. The eyes of *P. peruviana* are distinctly hairy, as can be seen in fresh specimens with the 16 mm. objective, or in balsam mounts with the 4 mm. objective. The eyes of *P. quercicola* How. are also mentioned as being faintly hairy, in the description of that species (Annals Entomological Society of America, Vol. I, p. 282, 1908).

***Prospaltella peruviana* sp. nov.**

Female.—Length, 0.75 mm.; greatest length of fore wing, 0.6 mm. Differs from *P. aurantii* How. to which it is closely related, as follows: Body slightly larger. Funicle joints 1, 2 and 3 increasing gradually and uniformly in both length and diameter. Fore-wings broader, slightly longer, not so slender and with a more pronounced outward

bend distad of stigmal vein, thus making distal half of wing broader in proportion to length than in *P. aurantii*. General color darker, being dark brownish yellow on thorax with brown abdomen; scutellum in life, pale-greenish with a suggestion of yellowish which in mounts becomes decidedly yellowish; legs honey-yellow. Fore-wings with dilute fuscous area covering disc below fuscous marginal vein.

Male.—Unknown.

Described from 2 female specimens reared by Prof. C. H. T. Townsend from *Hemichionaspis minor* Mask. on cotton, Mal-lares, May 25, 1910, and Macacar, Aug. 5, 1910. (both Dept. of Piura). Balsam mounts.

Type specimen on slide labeled Macacar, Aug. 5, '10.

This species has since been collected in great numbers both at Lima and all through the Department of Piura. In life its strikingly noticeable green scutellum distinguishes it at a glance from other species, although it seems to be somewhat intermediate between *P. aurantii* and *P. berlesei*; resembling the former in general wing and body characters and the latter in antennal structure, except for the short first funicle joint which alone would distinguish it from closely allied species.

Genus **SIGNIPHORA** Ashmead, 1880.

With regard to numbers, this genus is very well represented in Peru, the individuals being plentiful in various coccids, especially in *Pseudaonidia* sp. and *Hemichionaspis minor*. To date, however, only two species have been recognized, one of which is new and is described below; the other differing from the original description to such an extent, in some cases, that the following points have been noted at various times:

Signiphora occidentalis How.

Specimens of this species collected in various parts of Peru vary greatly in coloration. Some agree exactly with the original description of the species (Insect Life Vol. IV, No. 3 [1894] p. 235) while others show more yellow than the species is credited with. In the original description the head is spoken of as dark brown, but the writer has before him specimens of both sexes otherwise typical, in which the head and antennae

are almost wholly yellow, being touched with light brown only upon the vertex. Other female specimens show the pronotum with only a spot of brown near its center, the rest being lemon-yellow, and with the whole metanotum of the latter color. Some male specimens differ from the original description in having the scutellum bright lemon-yellow, all gradations between the two having been met with in Peruvian material.

The above observations were made from both balsam and dry mounts, and tend to show that the original description fixed the coloration of this species a little too closely (probably owing to the small number of specimens on which the description was based) and that the ratio of yellow to brown really varies quite widely among the different individuals of the species.

***Signiphora lutea* sp. nov.**

Female.—Length, 0.65 mm.; greatest length of wing, 0.5 mm. exclusive of cilia. Antennal scape robust, reaching to middle of eyes; pedicel large, stout, two-thirds as long as scape, and about the same width; funicle joints 1, 2 and 3 very small, increasing slightly in diameter from 1 to 3, joint 3 being from two to three times length of joint 1 and joint 2 intermediate in length between joints 1 and 3; together they are rather less than one-third length of pedicel, and the largest is only one-half the diameter of pedicel at its thickest part; club a trifle more than twice length of pedicel, long-oval in side view and nearly twice as wide as pedicel, when seen from above it is of same width as funicle joint 3, with parallel sides. Club sparsely longitudinally striated. Marginal vein with 6 strong, prominent bristles, sub-marginal vein with one and stigmal vein with one. All wing veins fuscous; forewings with fuscous patch covering all the disc below marginal and stigmal veins. Hind wings as in *S. occidentalis*.

Middle tibiae with two external spines near base and one near tip. Head deep lemon-yellow often tinged with brown on vertex; antennae lemon-yellow at base shading through fuscous into brown at tip of club; eyes very dark-red, almost black; ocelli dark-red; mouth parts light-brown, mandibles black-tipped. Thorax lemon to canary yellow except for brown pronotum and front margin of mesonotum, three minute black dots on each side near insertion of wings. Abdomen generally slightly darker than thorax, with a varying band of brown on cephalic portion. This brown band may vary in size from wide, covering the first three abdominal segments, to linear, or even dis-

appear. Small black spot on each ovipositor-sheath near its insertion. tip of same, brown. Legs yellow.

Male.—Aside from sexual characters, resembles female except in being rather smaller, more slender and having a brown patch on each side of the median line of the penultimate abdominal segment.

Described from many male and female specimens reared during 1910-1912 in the Dept. of Piura, Peru, and at Lima, Peru, from *H. minor* and *Pseudaonidia* sp. on various hosts, principally cotton and citrus. Both dry and balsam mounts.

Type on slide labeled A, 163° 3a. Samán (Dept. Piura) 12-22-'11—Rust.

NEOSIGNIPHORA gen. nov.

Differing from *Signiphora* in that body is larger and more slender. Antennae 7-jointed, counting scape as one joint, although it is really composed of two joints, the first of which may not articulate with head but which shows a distinct suture. Scape long and moderately slender, first joint nearly one-half as long as second and a little more slender; pedicel large and robust; funicle 4-jointed and quite small; club very long and slender, undivided and with several longitudinal keels. Mandibles tridentate. Eyes naked. Sub-marginal vein of fore-wing nearly twice as long as marginal. Apical spur of middle tibiae scarcely two-thirds as long as first tarsal joint.

Type, *N. nigra*, sp. nov.

Neosigniphora nigra sp. nov.

Female.—Length, 0.8 mm.; greatest length of wing, 0.55 mm. exclusive of cilia. Antennal scape moderately slender, reaching almost to top of eyes, pedicel a little longer than first scape joint and much more robust, being of a diameter equal to half its length; funicle joints 1, 2, 3 and 4 increasing gradually in diameter, the first being very small and the fourth of nearly two-thirds the diameter of club; funicle joints 1, 2 and 3 subequal in length, joint 4 from two to three times as long as any of the other three; club very long and slender tapering to a point, as long as scape, pedicel and funicle joints together and (when seen in broad outline) two-and-one-half times as wide as scape, or a little wider than pedicel; slightly crescent-shaped. Marginal vein with 5 strong bristles, sub-marginal with two, stigmal with one. Middle femora with strong spine near tip on inner side. Middle tibiae with two spines on outside at base and one near tip.

Color: Head (except vertex) dark brown, vertex deep brownish-yellow, eyes black, ocelli dark-red; mesonotum and metanotum brownish-yellow; rest of thorax and abdomen dark brown; legs mostly whitish except for a brown cloud over the upper half of the tibiae and the lower part of the femora; wing veins fuscous; fore-wings with just a suggestion of an indefinite fuscous band in center of wing parallel to the marginal and sub-marginal veins.

Male.—Unknown.

Described from ten female specimens reared by Prof. C. H. T. Townsend from *H. minor* on cotton from Chaquira, Dept. of Piura, Peru, Aug. 9 and 10, 1910. Five slides, balsam mounts.

Type specimen, one of three on slide labeled: Chaquira Aug. 10-'10—T.

Prof. Townsend notes the following from live specimens: "Fresh specimens show the head inflated and with whole of wide front light yellow; a little of face is yellow, but broad cheeks are blackish; prothoracic scutum with silvery anterior margin, pale yellow posteriorly-directed inwardly-oblique lateral border, and two light yellow fasciae immediately behind same and separated from each other by a black hair-line, the hinder one much the wider. Rest of thorax and all of abdomen shining black."

In this genus we have what appears to be a two-jointed scape. The first joint may or may not be movable, but it is at least separated from the head by a distinct suture. The writer has noted this peculiarity in other genera, particularly in *Signiphora*, and Prof. Townsend notes it in some undescribed species from the montaña of Peru. As yet no literature has been found upon this subject which is one which should be investigated by those interested in this and allied groups of the superfamily.

Monograph of Aleocharinae. (Coleop.).

We learn through the *Pomona Journal of Entomology* that Dr. A. Fenyès, of Pasadena, Cal., is monographing the Aleocharinae (Staphylinidae) for the *Genera Insectorum*.